

The Crittenden Press.

VOLUME XI

CRITTENDEN

The County's Natural Resources.

A BRIEF STATEMENT OF THE TOPOGRAPHY, DRAINAGE, AND AGRICULTURAL POSSIBILITIES.

Lead, Zinc and Spar Deposits
Mineral Paint Beds, Etc.

A Plain Statement of Facts from Prof. Ulrich, of STATE GEOLOGICAL SURVEY.

Editor Crittenden Press:
In reply to your letter of a few days ago, requesting a brief account of the natural resources of the county, permit me to say (1) that any thing I can do toward the development of her latent wealth will be done with pleasure; and (2) since such a general interest and desire for knowledge respecting the mineral deposits etc., of Crittenden have been called to life, I believe that I cannot better economize my already fully occupied time than by writing the following conservative statement:

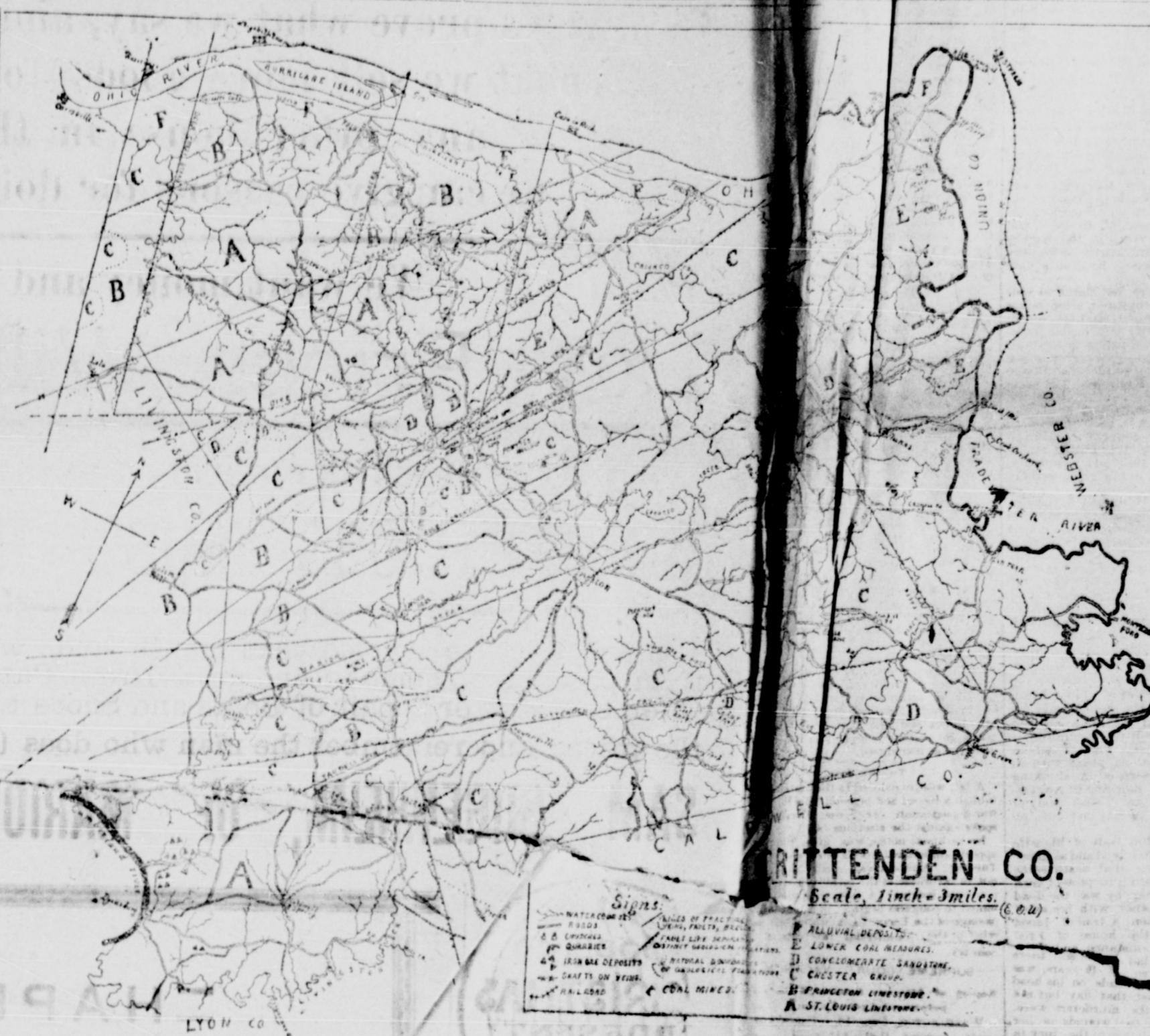
As you will probably wish to publish my letter, it may be well to say why I may be expected to know something of the county.

In the fall of 1888, Prof. John R. Procter, the accomplished Chief of the Geological Survey of the State, sent me to Western Kentucky to make a careful and systematic survey of the two counties of Caldwell and Crittenden. A good part of the two years passed since that date were spent in field-work there, and, though the region presented unusual geological difficulties, it may be claimed, without much fear of contradiction, that no portion of the State has received a more thorough investigation. My report is nearly ready for publication, and will be placed into the hands of the state printer as soon as he is through with the work for the Constitutional Convention, which at present is claiming his entire attention. This unexpected delay in the publication of the full report, makes it desirable that at least a digest of its contents be published in advance. Indeed, the numerous inquiries which have been made during last two months, make such a publication not only desirable but necessary, if I would not put more time on individual answers than I can spare. I have, therefore, concluded to write you a fairly full and perfectly unprejudiced and conservative account of the results of my work in Crittenden. To make these more available, I have prepared the accompanying map, drawn to the scale of one inch—three miles, and showing, I believe in as clear a manner as possible on so small a scale, the outlines of the county, the watercourses, roads, the location of the towns, post offices, principal churches and other well known points besides, the outlines of the different geological formations, the courses of the veins and fractures of the strata and location of mineral deposits of various kinds. It may take some time to decipher all these features, but if you will print it properly, I have no doubt that most everyone will succeed in doing so.

TOPOGRAPHY AND DRAINAGE.

The topography of the county, taken as a whole, is decidedly hilly. Much of this unevenness is the result of an unusually extensive system of fracturing which this portion of Kentucky has been subjected to. Many interesting problems are connected with these convulsive movements of the earth's crust, which so frequently result in marked topographical peculiarities, and in this region generally affect, if they are not the controlling factors of the lines of drainage. These movements have further been of consequence to Crittenden in that to them she owes her metalliferous veins. Denudation and the leveling influences of time have wrought great changes since we shake up our. Indeed, cases might be pointed out where the present topography is quite the opposite of what it must have been immediately after that era; but, as the object of this communication is to show what is rather than what has been, their discussion would be out of place here.

Except in the southern and north-



western portions of the county, the hills consist almost uniformly of sandstones. In the excepted regions the "flint" or chert debris of the St. Louis limestone is the predominating rock. It is to the "flint hills" of these regions, that the valuable limonite iron ores are restricted.

Drainage is ample as may be seen from the abundance of the streams. Most of these flow into the Ohio river, which forms the northern boundary of the county. The Tradewater flows along the northeastern border and the Cumberland forms about one-half of the southwestern border. The possession of facilities for cheap transportation, such as is afforded by these navigable rivers, is the first importance in the development of the resources of any locality. Their value here cannot be overestimated.

GEOLICAL FORMATIONS, SOILS AND TIMBERS.

The geologically lowest or oldest formation of the surface in the county is the St. Louis limestone of the sub-carboniferous system. The limestone itself is but rarely seen, and only at such points where the flint debris it. It outcrops along the Cumberland river in the vicinity of Dycusburg, and in the bed of Caney Fork at Tolu. The limestone is compact, siliceous, and of various shades of blue. The beds at Dycusburg are fine grained magnesian limestone, and would not doubt make good hydraulic cement.

The regions of the county that are underlaid by this group of limestone (marked A on the map) are distinguished by an abundance of chert or flint blocks, which have remained as a residue after the disintegration of the limestone. The soil covering this chert debris is rarely deep, but very productive. Timber grows well and rapidly on it, and when sufficient care is exercised to prevent its washing, it maintains its rank as one of the best soils of the State for a long time.

Resting on these cherty limestones is another series of limestones to which I have applied the name of Princeton group. They have a thickness in the county of about 200 feet, and the spaces where they are at the surface are marked "B" on the map. The lower 150 feet consist mainly of white dolitic limestone, many of which would afford good building stone, while the most of the beds could be burned into lime of superior quality. This portion of the group also furnishes the best soils of the county. These are practically inexhaustible, and inertility are scarcely inferior to the famous "blue grass" soils of central Kentucky.

The regions where the Princeton limestone is the surface rock are not very extensive, yet they constitute a fair proportion of the area of the county. Four of these regions deserve mention: The first and

BUILDING STONE, LIME, CLAY, ETC.

Building stone of good quality and varieties occurs abundantly throughout the county. The Princeton limestone, especially in the Clements valley near Bethel church, could be made to furnish unlimited quantities of dolitic limestone, nearly all of which could be burned into lime of extra quality. Some of the beds would furnish also large blocks of this stone, which is so deservedly esteemed as a building rock. The hydraulic limestone on the Cumberland at Dycusburg and other points along the river has been mentioned already. As far as can be determined from analysis, this rock should make a good quality of hydraulic cement.

Sandstone suitable for ordinary building purposes is present in plenty. Flagging of unusual hardness and remarkably even surface is found in great quantity in the hills east of Crayeville. Massive beds of light colored sandstone also occur there. Many of these sandstones are almost pure quartz and have been used with success as furnace linings. Many points in the county might be mentioned where good building stone both of lime and sandstones, might be quarried, but lack of space forbids.

Brick clays of good quality are abundant in the regions where the Princeton limestone is at the surface. One bed in particular deserves mention. This is exposed in the roadside a short distance north of New Salem church. Its natural light red color changes to a brownish red when the clay is burned. Brick manufactured from this clay would have a more desirable color than any other known to me from Western Kentucky. Common red pottery ware could also be made of it, and it would prove very well as a cheap pigment.

A large bed of embers and yellow ochres, of very fine quality, occurs on the land of Mr. Murphy, situated about five and one-half miles southwest of Marion. With better facilities of transportation this deposit cannot fail to remunerate investment. The bed is between six and eight feet thick, and has been traced over an area of at least eight acres.

Other cheap pigments could be manufactured from the soft chester shales which are exposed at several points in the county. I will mention only two beds which have been sampled and tested with satisfactory results. The first is an eight foot bed of very soft green and purplish shales occurring on a level with the O. V. R. R., beneath the limestone of Giles' quarry, about one and a half miles west of Nunn's station. The other is from an even thicker bed of shales on land belonging to Mr. Wm. Wilson, situated about midway between Marion and Crittenden

SPRINGS, ON THE LINE OF THE PROPOSED RAILROAD.

COAL.

Only one bed of coal having a distinct value occurs in the county. This bed is however of such excellent quality that its importance as a factor in the development of the county is scarcely to be overestimated. Its general excellence as a fuel coal had long ago been recognized. Before the decadence of the steamboat traffic, the Trade-water coals, as they were called, were esteemed above all others by river men for steam making qualities. Before the war the Bel's, Caseys and other mines were worked vigorously. Even now when the principle demand for the output of these mines has practically ceased, limited operation is maintained at some of them. This is possible only because of the premium they command over competing coals, otherwise it would not pay the miners to haul their product sixteen miles to Marion over distressingly rough roads.

But the principle value and feature of this coal lies in its coking qualities, and in this it fills a want that is becoming more strongly felt every year. As will be seen later on, the coke made from the Trade-water coals, seems to compare favorably in every essential feature with the best coals of the country. And the value of this fact in the development of the county's iron and other mineral deposits cannot be overestimated.

Those conversant with these matters will see at once that these coals compare very favorably with Youghiogheny coal, which is so deservedly esteemed by the blacksmiths, and for the lighting of our crop crosses over into Webster. Only two mines are in operation in the county, Barnsby's ("Kit and Jacks") and Tates, but evidences of former activity are to be seen at Lamb's, Caseys, Bell's, Spurhards, Miners shaft, Cooks and Nunn's or Sneed's mines. Across the river in Webster, the Crab Orchard creek mines, while I regard as the same bed, are fairly active.

The average thickness of the seam as noted at all these points is about four feet, with the extremes of variation three feet six inches and five feet. The roof, wherever I have seen it, is excellent, consisting generally of shaly sandstones. At limited points in the mines there may be a few inches of black shale or shales, or of softer gray shales between these and the coal. At the top of the coal there is almost invariably a thin layer (several inches) of coal that is usually termed a cannel, but its composition, as determined by Dr. Peter, the chemist to the survey, is such that it scarcely deserves that denomination. This cap at the bottom, are among the chief

characteristics of this bed of coal.

The main part of the bed, varying between three and four feet thick, consists of a very black and very pure, soft bituminous coal, closely resembling the best Pittsburg varieties in its external appearance. There is some fibrous coal between the laminae and a little pyrites. Analyses of the coal from several localities show that it cokes well, with the coke of moderate density and averaging over 60 per cent. Several barrels of coke produced by very rude methods at the Barnby mines, certainly looked like a good coke; and Mr. McAlister, of Princeton, Ky., one of the owners of the Crab Orchard mines of Webster county, (previously referred to) assured me that the coal from that mine produced a coke regarded by Pittsburg experts as in every way equal to the best Connellsville.

An average proximate analysis of these Tradewater coals is as follows:

| | |
|-----------------------------------|--------|
| Specific gravity | 1.315 |
| COMPOSITION, DRIED AT 212 °F. | |
| CARBON | 78.50 |
| VOLATILE COMBUSTIBLE MATTER | 37.00 |
| CARBON IN THE COKE | 55.60 |
| ASHES | 7.40 |
| COKE 63 PER CENT. | 100.00 |

An average ultimate analysis of the same gave the following:

COMPOSITION, DRIED AT 212 °F.

CARBON

HYDROGEN

SULPHUR

ASHES

NITROGEN AND LOSS

100.00

Comparing the above analyses we find that in the matter of metallic iron the Crittenden ores almost head the list, while the phosphorus, which as explained above should really be no more than 0.2 per cent, is considerably lower than in the Clinton ores of both Alabama and Tennessee.

As usual these limonite ores occur exclusively in "pockets." These are numerous but vary greatly in extent, a few appearing practically inexhaustible, while many may not contain over a thousand tons of ore. In the Hurricane district the deposits are mostly of the smaller sort, but being very abundant the aggregate supply is very large and, no doubt, sufficient to satisfy the demand of a furnace for many years.

In the Dycusburg district some of the deposits are unquestionably very large. The majority are situated from one to two miles north of Dycusburg, on each side of Paddy's creek. A large hill on the South side of the creek near the river (owned by Dr. W. S. Graves, and Messrs. Haywood and Marshall) must contain an immense quantity of "honey comb" and "pot" ore—mainly the latter. Going up the creek I examined the ore banks chiefly dependent on the old furnace company. These are not exhausted by any means; great quantities of good ore, principally of the "honey comb" variety, being still in sight. Another body of fine ore occurs on Dr. Graves' land one and one-half mile east of the burg. I have information besides of other bodies in this vicinity which I did not find time to visit. Enough was seen however to convince me that this district could insure a steady supply of ore to a furnace for at least fifty years.

IRON ORE DEPOSITS.

Iron ore of several varieties occur at many points in the county, but only those occurring in the flinty debris of the St. Louis limestone north and west of Dycusburg, and those in the same association in the region between Sheridan P. O., and Hurricane furnace, are likely to have permanent value. These, therefore, alone deserve mention here.

These two regions contain iron

ores not only of first-class quality

but in large quantities as well.

The last fact is, of course, of prime importance.

These ores are limonites,

brown ores, and both in their association and quality, are precisely like those of Western Tennessee and the region of Western Kentucky,

and are as recent discover-

ies.

LEAD, ZINC AND SPAR.

It may be stated without fear of

contradiction that Crittenden county contains more deposits of lead,

zinc, fluor spar and barite than any

other section of the State. Most

of these have been known for

years and only a few are to

be mentioned.

of them, except the limbia mines, with even less capital to develop many shafts were absolutely dead. Nor are the veins of gold and silver well informed. I know that gold is found in this region. I looked for it in the

center of the county.

and surrounding coun-

ties taking an inv-

estigation and finding same e-

to sell everything of

woods and timber.

ANALYSES OF THE CRITTENDEN ORES.

Analyses (partial) of Tennessee,

Alabama, and Crittenden

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Santa Claus' HEADQUARTERS

Xmas is Coming.

And Hays is already here with the most complete line of Christmas Goods ever brought to Marion.

After the 15th his store will be filled with anything that will please the most fastidious taste. You are respectfully solicited to call and see his goods before buying elsewhere,

Thereby Saving 25 Per Cent.

H A Y S .

Buy your clothing of Sam Gugenheim.

Big stock of new clothing cheap at Sam Gugenheim's.

New dress goods at Gugenheim's.

Novelties in dry goods at Sam Gugenheim's.

Nobby clothing at unheard of prices at Sam Gugenheim's.

Buy your tools and shoes of Sam Gugenheim.

Don't fail to see my stock before buying.

Sam Gugenheim.

LOCAL BREVIETES

Our Roll cantle saddle is a dandy.

Cridger & Cridger.

Take a look at our stoves.

Pierce & Son.

All descriptions of canned goods at Sisco's.

All cloaks, jackets and wraps of any kind at cost at A. Wolf's.

For fresh Oysters go to Gibbs & Gilbert.

Clothing, selling at cost for next 30 days, at P H Woods.

Cridger & Cridger keep first class hardware for little money.

Stoves! Stoves!! Stoves!!!—Low prices.

Cridger & Cridger.

Blankets, shaws, cloaks, heavy boots and shoes at cost at Wolf's.

Eggs are as good as gold; bring them in while the price is high.

P H Woods.

Don't fail to see our stoves before buying.

Cridger & Cridger.

The Seats at the Opera House, every night. Don't fail to attend.

Don't forget L. N. Sisco when you want groceries, tinware, and glassware.

Young man, if you wear a gold or silver watch, now is the time and Freeman's is the place to buy it.

Nice country sorgum 40¢ per gallon, by the barrel 35¢ per gallon.

P H Woods.

Oh! the candys, the candys, the candys, and so cheap too, at Gibbs & Gilbert.

For the best candys, and the largest assortment of the finest chewing gum in Marion at Sisco's.

A Bengal razor is the best earth, sold and guaranteed by Cridger & Cridger.

Have you seen that beautiful jewelry at Freeman's. It can not be beat in quality, quantity and prices.

Axes, wedges, shot, powder, saws, saddles, stoves, and all kinds of hard ware at Cridger & Cridger.

Tolu, Ky.

Go Hillyard & Woods for "C. C. Certain Cough Cure," it cures coughs, colds and all throat and lung diseases.

Pierce & Son.

Dr. T. H. Cossitt, the Dentist in Marion makes the Finest and Best Artificial Teeth on Best Rubber plates that can be made in this country at \$15.00 per full set.

Silverware in great abundance, all kinds, all prices, all styles at Freeman's; and remember that it is cheaper than ever before.

Dr. Weaver don't sing song and dances about the McKinley bill etc. But if you want first class dental work done for little money call on him.

Having purchased John Flanary's stock of goods at Fords Ferry, I will close out a considerable portion of them at cost. Now is the time to secure bargains.

R. L. Flanary.

Large and beautiful stock of Christmas Goods, Dolls and Toys in great variety, Violins, Accordions, Jewelry, Finest Perfumes, Notions, and Fancy Goods, Big Stock of Pure and Fancy Candies. Be sure to come and see that we will sell all cheap at T. H. Cossitt & Co's, Drug Store in Marion.

3w.

County Court Notes.

J. S. Bell qualified as administrator of the estate of John Bell deceased.

Wm Groves, col., was declared a pauper, and directed to be sent to the poorhouse.

Lank Grissom qualified as curator of the will of Harrison Yeakey deceased.

J. P. Debowe qualified as deputy sheriff for ex sheriffs Flanary and Pierce.

The following claims were allowed:

J. E. Brawner, for coal \$1.90.

Dr. J. H. Clark, medical attention to pauper \$1.50.

S. S. Carrick, delivering pauper to poorhouse, \$4.00.

S. Gugenheim, carpet for court room \$41.65.

Look at This.

Some two weeks ago, we referred to the Advanced Teachers Course of Providence M & F Academy. More recently, we learn that the School will be divided into four divisions as follows:

First Divisions; Advanced Teachers Course, including Algebra, Geometry, Latin, Pages Theory and History of Kentucky.

This course is designed for Teachers who have experience and tact in teaching and who desire better schools and higher wages and have pluck and energy enough to try to get them.

All kinds of hardware at Cridger & Co's, Tolu, Ky.

Overcoats and winter suits at 25 per cent less than former prices at Wolf's.

Dr. Weaver continues to do first class dental work at reasonable prices.

Buy your clothing of Sam Gugenheim.

Make things warm this winter by using a little Pearl stove. For sale by Cridger & Cridger.

Buy your tools and shoes of Sam Gugenheim.

Don't fail to see my stock before buying.

Sam Gugenheim.

Dress goods in plain, striped, brocaded and plaid at greatly reduced prices at Wolf's.

Heavy boots must be sold; come quick and get a bargain.

P. H. Woods.

Make things warm this winter by using a little Pearl stove. For sale by Cridger & Cridger.

Buy your tools and shoes of Sam Gugenheim.

Don't fail to see my stock before buying.

Sam Gugenheim.

First Divisions; Advanced Teachers Course, including Algebra, Geometry, Latin, Pages Theory and History of Kentucky.

This course is designed for Teachers who have experience and tact in teaching and who desire better schools and higher wages and have pluck and energy enough to try to get them.

Second Division; Intermediate Teachers Course, including all the common school branches. This course is designed for teachers who wish to qualify themselves, this officer, who is no longer over the top of a ten pounder.

Third Division; Preparatory Teachers Course, including all the common school branches. This course is designed for those who do not hold certificates but wish to prepare for examination and teaching.

Fourth Division; Elective Course, including such studies as the pupil may put up with X's hole.

The school opens Dec. 29 1890. Any one desiring a circular of particulars should write to Coleman & Hicks, Providence, Ky.

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Crittenden Press / CRITTENDEN

ISSUED WEEKLY.

WALKER, Publisher.

Writing to the Press to be a week, to place before its facts concerning the resources of Crittenden. Much has been said and the coal, the lead, the iron, the building stone, and the clays of the country have large per cent of ore on this subject has been of a speculative nature.

Geologist has recently us some merited attention the letter we publish emanating from an authoritative source which has spent considerable time, and his letter after a thorough inspection unquestionably carries it. It stands high in 1879 and 1880 superintendent of the Cari-

Mines of Boulder county. He is now a member of the Mineral Survey staff of Minnesota and Kentucky; curator at the Cincinnati Society History, the largest institution west of the Alleghenies; one of the originators of the American Geological Society to those in development and progress to these facu-

lities; a total citizenship; fine mining and manufacturing, the future of Crittenden think about.

In last three years Ma- 100 her population, and especially the thing that three. This is a

on the numerous

unstinted wealth be-

cause of the

minerals of

the coal, the

and the